

WHAT IS CLAIMED IS:

1. A process for preparing a concentrated photographic spectral sensitizing dye-water composition which comprises adding an anionic sensitizing dye to an aqueous medium in the substantial absence of organic solvent, and agitating the combined dye and aqueous medium, wherein the anionic dye forms a liquid-crystalline dye phase in the aqueous medium and the agitation is performed in the presence of a nonionic surfactant having an HLB of less than 12 and an aqueous solubility at 25°C of greater than 10 ppm, which nonionic surfactant is in the aqueous medium at a level of from 10 to 1000 ppm.

2. A process according to claim 1, wherein the viscosity at 0.1s⁻¹ shear rate of the dye-water composition in the absence of the nonionic surfactant would be greater than 100 cp, and the surfactant is present at a level sufficient to substantially reduce air entrainment during agitation of the dye-water composition.

3. A process according to claim 2, wherein the viscosity at 0.1s⁻¹ shear rate of the dye-water composition in the absence of the nonionic surfactant would be greater than 500 cp.

4. A process according to claim 1, wherein nonionic surfactant is selected to have an HLB number of at least 2.

5. A process according to claim 1, wherein the anionic dye is present in the dye-water composition at a concentration of at least 0.4 wt%.

6. A process according to claim 1, wherein the anionic dye is present in the dye-water composition at a concentration of from 0.4 to 5 wt%.

7. A process according to claim 1, wherein the anionic dye is present in the dye-water composition at a concentration of from 1.0 to 5 wt%.

8. A process according to claim 1, wherein the anionic dye is present in the dye-water composition at a concentration of from 2.0 to 5 wt%.

9. A process according to claim 1, wherein the agitation is performed at a temperature of from 20 to 50 °C.

10. A process according to claim 1, wherein agitation of the dye-water composition is performed for less than 30 minutes to form the liquid-crystalline dye phase in the aqueous medium.

11. A process according to claim 1, wherein the nonionic surfactant is present in the dye-water composition at a level that is less than 500 ppm.

12. A process according to claim 1, wherein the nonionic surfactant is present in the dye-water composition at a level of from 10 to 200 ppm.

13. A process according to claim 1, wherein the nonionic surfactant is an alkoxylated poly(dimethyl siloxane).

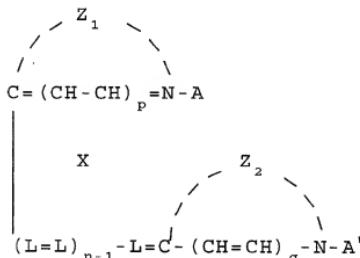
14. A process according to claim 1, wherein the nonionic surfactant is an ethoxylated alcohol.

15. A process according to claim 1, wherein the nonionic surfactant is a polypropylene oxide-polyethylene oxide block copolymer.

16. A process according to claim 1, wherein the nonionic surfactant is a hydrophobically modified derivative of a mono or disaccharide compound.

17. A process according to claim 1, wherein the dye is an anionic cyanine spectrally sensitizing dye.

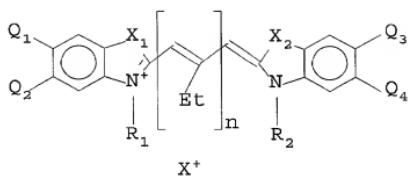
18. A process according to claim 17 wherein the dye is of the formula



wherein Z_1 and Z_2 each independently represents the atoms necessary to complete a substituted or unsubstituted heterocyclic nucleus, each L independently represents a substituted or unsubstituted methine group, n is a positive integer of from 1 to 4, p and q each independently represents 0 or 1, A and A' each independently represents an alkyl group substituted with an anionic acid solubilizing group, and X represents hydrogen or a cationic counterion to balance the charge of the molecule.

19. A process according to claim 18, wherein A and A' each independently represents a sulfoalkyl group.

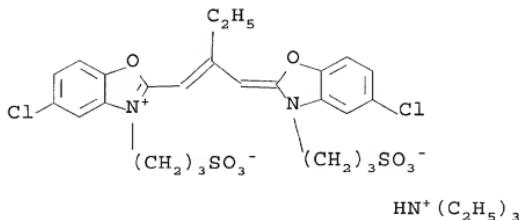
20. A process according to claim 17, wherein the dye has the formula



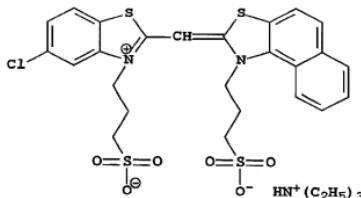
wherein n is 0 or 1; X₁ and X₂ each independently represents oxygen or sulfur, Q₁, Q₂, Q₃ and Q₄ each independently represents hydrogen, halogen, alkyl, aryl, alkoxy, aryloxy or may contain the atoms necessary to form a beta or linear naphtho-fused ring; R₁ and R₂ each independently represents an alkyl group substituted with an anionic acid solubilizing group; and X⁺ represents hydrogen or a cationic counterion to balance the charge of the molecule.

21. A process according to claim 20 wherein R₁ and R₂ each independently represents a sulfoalkyl group.

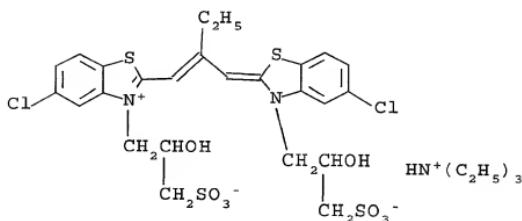
22. A process according to claim 1 wherein the dye is of the formula



23. A process according to claim 1 wherein the dye is of the formula



24. A process according to claim 1 wherein the dye is of the formula



25. A stable, concentrated dye-water composition substantially free of organic solvent for use in spectrally sensitizing photographic emulsions comprising: an aqueous medium, an anionic sensitizing dye dispersed in the aqueous medium in the form of a liquid-crystalline dye phase, and from 10 to 1000 ppm of a nonionic surfactant having an HLB of less than 12 and an aqueous solubility at 25°C of greater than 10 ppm.

26. A composition according to claim 25, wherein the anionic dye is dispersed in the aqueous medium at a concentration of at least 0.4 wt%.

27. A composition according to claim 25, wherein the anionic dye is dispersed in the aqueous medium at a concentration of from 0.4 to 5 wt%.

28. A composition according to claim 25, wherein the anionic dye is dispersed in the aqueous medium at a concentration of from 1.0 to 5 wt%.

29. A composition according to claim 25, wherein the anionic dye is dispersed in the aqueous medium at a concentration of from 2.0 to 5 wt%.

30. A composition according to claim 25, wherein the nonionic surfactant is present at a level that is less than 500 ppm.

31. A composition according to claim 25, wherein the nonionic surfactant is present at a level of from 10 to 200 ppm.